



SEQUENCE LISTING

1

<110> Gaiger, Alexander
McNeill, Patricia D.
Smithgall, Molly
Moulton, Gus
Vedwick, Thomas S.
Sleath, Paul R.
Mossman, Sally
Evans, Lawrence
Spies, A. Gregory
Boydston, Jeremy

<120> COMPOSITIONS AND METHODS FOR WT1
SPECIFIC IMMUNOTHERAPY

<130> 210121.465C6

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<141> 2001-10-30

<150> 09/938,864
<151> 2001-08-24

<150> 09/785,019
<151> 2001-02-15

<150> 09/685,830
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<150> 09/684,361
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<150> 09/276,484
<151> 1999-03-25

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1 5

<210> 308
<211> 9
<212> PRT
<213> Mus musculus

<400> 308
 Tyr Ser Ser Asp Asn Leu Tyr Gln Met
 1 5

<210> 309
 <211> 6
 <212> PRT
 <213> Homo sapien

<400> 309
 Gly Ala Ala Gln Trp Ala
 1 5

<210> 310
 <211> 12
 <212> PRT
 <213> Homo sapien

<400> 310
 Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro
 1 5 10

<210> 311
 <211> 15
 <212> PRT
 <213> Homo sapien

<400> 311
 Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly
 1 5 10 15

<210> 312
 <211> 5
 <212> PRT
 <213> Homo sapien

<400> 312
 His Ala Ala Gln Phe
 1 5

<210> 313
 <211> 32
 <212> PRT
 <213> Homo sapien

<400> 313
 Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu
 1 5 10 15

Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu
 20 25 30

<210> 314
 <211> 32

<212> PRT
 <213> Homo sapien

<400> 314
 Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg
 1 5 10 15
 Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser
 20 25 30

<210> 315
 <211> 4
 <212> PRT
 <213> Homo sapien

<400> 315
 Arg Tyr Phe Lys
 1

<210> 316
 <211> 14
 <212> PRT
 <213> Homo sapien

<400> 316
 Glu Arg Arg Phe Ser Arg Ser Asp Gln Leu Lys Arg His Gln
 1 5 10

<210> 317
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 317
 Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr
 1 5 10 15
 His Thr Gly Lys Thr Ser
 20

<210> 318
 <211> 21
 <212> PRT
 <213> Homo sapien

<400> 318
 Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
 1 5 10 15
 Met His Gln Arg Asn
 20

<210> 319
 <211> 449
 <212> PRT
 <213> Homo sapien

<400> 319
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Ala Pro Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
 85 90 95
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
 100 105 110
 Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
 115 120 125
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
 130 135 140
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
 145 150 155 160
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
 165 170 175
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
 180 185 190
 Tyr Ser Val Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
 195 200 205
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
 210 215 220
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
 225 230 235 240
 Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser
 245 250 255
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu
 260 265 270
 Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
 275 280 285
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro
 290 295 300
 Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
 305 310 315 320
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
 325 330 335
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
 340 345 350
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
 355 360 365
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
 370 375 380
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
 385 390 395 400
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
 405 410 415
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val

420	425	430
Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala		
435	440	445
Leu		

<210> 320
<211> 449
<212> PRT
<213> Mus musculus

<400> 320		
Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Ser		
1 5 10 15		
Ser Leu Gly Gly Gly Gly Cys Gly Leu Pro Val Ser Gly Ala Ala		
20 25 30		
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr		
35 40 45		
Gly Ser Leu Gly Gly Pro Ala Pro Pro Ala Pro Pro Pro Pro Pro		
50 55 60		
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly		
65 70 75 80		
Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Leu His Phe		
85 90 95		
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe		
100 105 110		
Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe		
115 120 125		
Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Thr Ile		
130 135 140		
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Ala Pro Ser Tyr		
145 150 155 160		
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe		
165 170 175		
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln		
180 185 190		
Tyr Ser Val Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser		
195 200 205		
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp		
210 215 220		
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln		
225 230 235 240		
Met Asn Leu Gly Ala Thr Leu Lys Gly Met Ala Ala Gly Ser Ser Ser		
245 250 255		
Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Gly Ile Gly Tyr Glu		
260 265 270		
Ser Asp Asn His Thr Ala Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile		
275 280 285		
His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Ser		
290 295 300		
Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys		
305 310 315 320		
Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys		
325 330 335		

Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
 340 345 350
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
 355 360 365
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
 370 375 380
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
 385 390 395 400
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
 405 410 415
 Arg Trp His Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
 420 425 430
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu His Val Ala
 435 440 445
 Leu

<210> 321
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

Pro Ser Gln Ala Ser Ser Gly Gln Ala
 1 5

<210> 322
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

Ser Ser Gly Gln Ala Arg Met Phe Pro
 1 5

<210> 323
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

Gln Ala Arg Met Phe Pro Asn Ala Pro
 1 5

<210> 324
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

Met Phe Pro Asn Ala Pro Tyr Leu Pro
 1 5

<210> 325

<211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 325
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys
 1 5

<210> 326
 <211> 9
 <212> PRT
 <213> Homo sapien and Mus musculus

<400> 326
 Ala Pro Tyr Leu Pro Ser Cys Leu Glu
 1 5

<210> 327
 <211> 1029
 <212> DNA
 <213> Homo sapiens

<400> 327
 atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
 tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
 tgcggtccgt gcaaaatgtat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
 aaactgaccg ttgcaaaact gaacatcgat caaaaacctg gcactgcgcc gaaatatggc 240
 atccgtggta tcccgaactct gctgctgttc aaaaacgggtg aagtggcggc aaccaaagtg 300
 ggtgcactgt ctaaagggtca gttgaaagag ttcctcgacg ctaacactggc cggttctgg 360
 tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtcg tgctagctct 420
 ggtggcagcg gtctggttcc gcgtggtagc tctgggtcg gggacgacga cgacaaatct 480
 agtaggcaca gcacagggtta cgagagcgtat aaccacacaa cgcccatctt ctgcggagcc 540
 caatacagaa tacacacgca cgtgtcttc agaggatttc aggtatgtcg acgtgtgcct 600
 ggagtagccc cgactttgtt acggtcggca tctgagacca gtgagaaacg ccccttcatg 660
 tgtgcttacc caggctgcaa taagagatat tttaagctgt cccacttaca gatgcacagc 720
 aggaaggcaca ctggtgagaa accataccaa tgtgacttca aggactgtga acgaagggtt 780
 tttcgttcag accagctcaa aagacacacaa aggagacata caggtgtgaa accattccag 840
 tgtaaaactt gtcagcgaaa gttctccgg tccgaccacc tgaagaccca caccaggact 900
 catabaggtg aaaagccctt cagctgtcggt tggccaaagt gtcagaaaaa gtttgcccgg 960
 tcagatgaat tagtccgcca tcacaacatg catcagagaa acatgaccaactccagctg 1020
 gcgctttga 1029

<210> 328
 <211> 1233
 <212> DNA
 <213> Homo sapiens

<400> 328
 atgcagcatc accaccatca ccacatgagc gataaaatta ttcacctgac tgacgacagt 60
 tttgacacgg atgtactcaa agcggacggg gcgatcctcg tcgatttctg ggcagagtgg 120
 tgcggtccgt gcaaaatgtat cgccccgatt ctggatgaaa tcgctgacga atatcagggc 180
 aaactgaccg ttgcaaaact gaacatcgat caaaaacctg gcactgcgcc gaaatatggc 240
 atccgtggta tcccgaactct gctgctgttc aaaaacgggtg aagtggcggc aaccaaagtg 300

ggtgcactgt ctaaaggta gttgaaagag ttcctcgacg ctaacctggc cggttctgg 360
 tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtagc tgctagctct 420
 ggtggcagcg gtctggttcc gctggtagc tctgggtcg gggacgacga cgacaaatct 480
 agtagggct ccgacgttcg tgacactgaac gcactgctgc cggcagttcc gtcctgggt 540
 ggtgggtgt gttgcgcact gccggtagc ggtgcagcac agtgggtcc gtttctggac 600
 ttgcacccgc cgggtgcata cgcatacggt tccctgggtg gtccggcacc gcccggca 660
 cccggccgc cggccggcc gccggccac tccttcatca aacaggaacc gagctgggt 720
 ggtcagaac cgcacgaaga acagtgcctg agcgcattca cggttcactt ctccggccag 780
 ttcaactggca cagccggacg ctgtcgctac gggcccttcg gtcctcctcc gcccagccag 840
 gcgtcatccg gccaggccag gatgtttcc aacgcgcctt acctgcccag ctgcctcgag 900
 agccagcccg ctattcgaa tcagggttac agcacggta ctttcgacgg gacgcccagc 960
 tacggtcaca cggccctcgca ccatgcggcg cagttccca accactcatt caagcatgag 1020
 gatcccattgg gccagcaggg ctcgctgggt gaggcagcgt actcggtgcc gccccggc 1080
 tatggctgcc acaccccccac cgacagctgc accggcagcc aggcttgc gctgaggacg 1140
 ccctacagca gtgacaattt ataccaaattg acatcccagc ttgaatgcac gacctggaaat 1200
 cagatgaact taggagccac cttaaaggcc 1233

<210> 329
 <211> 1776
 <212> DNA
 <213> Homo sapiens

<400> 329
 atgcagcatc accaccatca ccacatgagc gataaaatta ttcacactgac tgacgacagt 60
 tttgacacgg atgtactcaa agcggacggg gcgatctcg tcgatttctg ggcagagtgg 120
 tgcggccgt gcaaaatgtat cggcccgatt ctggatgaaa tcgctgacga atatcaggc 180
 aaactgaccg ttgcaaaact gaacatcgat caaaacccctg gcactgcgcc gaaatatggc 240
 atccgtggta tcccgaactt gctgctgttc aaaaacgggtg aagtggcgc aaccaaagt 300
 ggtgcactgt ctaaaggta gttgaaagag ttcctcgacg ctaacctggc cggttctgg 360
 tctggccata tgcagcatca ccaccatcac cacgtgtcta tcgaaggtagc tgctagctct 420
 ggtggcagcg gtctggttcc gctggtagc tctgggtcg gggacgacga cgacaaatct 480
 agtaggatgg gtcggacgt tctgtgacactg aacgcactgc tgccggcagt tccgtccctg 540
 ggtgggtgt gttggcgc actgcccgtt agcggcgcag cacagtggc tccgggtctg 600
 gacttcgcac cggccgggtgc atccgcatac gttccctgg gtggtccggc accggccggc 660
 gcacccggcc cggccggcc gccggccggc cactcctca tcaaacagga accgagctgg 720
 ggtggcgcag aaccgcacga agaacagtgc ctgagcgcac tcaccgttca ctttcggc 780
 cagttcaactg gcacagccgg agcctgtcgc tacggccct tcgggtctcc tccggccagc 840
 caggcgtcat cggccggc caggatgttt cctaacgcgc cttacactgccc cagtcgcctc 900
 gagagccagc cggctattcg caatcagggt tacagcacgg tcacacttgcg cgggacgccc 960
 agctacggtc acacgccttc gcaccatgcg ggcgcgttcc ccaaccactc attcaagcat 1020
 gaggatccca tggccagca gggctcgctg ggtgagcagc agtactcggt gcccggcc 1080
 gtctatggct gccacacccc caccgcacgc tgcacccggca gccaggctt gctgctgagg 1140
 acggccctaca gcagtgcacaa ttatataccaa atgacatccc agcttgcattt catgacactgg 1200
 aatcagatga acttaggagc caccttaaag ggccacagca cagggtacga gagcgataac 1260
 cacacaacgc ccattctctg cggagcccaa tacagaatac acacgcacgg tgtcttcaga 1320
 ggcatttcagg atgtgcgcacg tgcgttgcgat gtagcccgat ctcttgcacg gtcggcatct 1380
 gagaccagtg agaaaacgccc cttcatgtgt gcttacccag gtcgcataaa gagatattt 1440
 aagctgtccc acttacagat gcacagcagg aagcacactg gtgagaaaacc ataccagtgt 1500
 gacttcaagg actgtgaacg aagggtttt cgttcagacc agctcaaaag acaccaaagg 1560
 agacatacag gtgtgaaacc attccagtgt aaaacttgcg agcgcggaaatctt ctccgggtcc 1620
 gaccacactga agacccacac caggactcat acaggtgaaa agcccttcag ctgtcgggtgg 1680
 ccaagttgtc agaaaaagtt tgcccggtca gatgaatttgc tccggccatca caacatgcac 1740
 cagagaaaca tgaccaaact ccagctggcg ctttgc 1776

<210> 330
<211> 771
<212> DNA
<213> *Homo sapiens*

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<400> 330
atgcagcatc accaccatca ccacggctcc gacgttcggt acctgaacgc actgctggcg 60
gcagttccgt ccctgggtgg tgggtgggt tgcgcaactgc cggttagcggt tgcatgcacag 120
tgggctccgg ttctggactt cgccaccggccg ggtgcacatccg catacgggttc cctgggtgg 180
ccggcaccgc cgccggcacc gccggccggccg ccggccggccgc cgccgcactc cttcatcaaa 240
caggaaccga gctgggggtgg tgcagaaccg cacgaagaac agtgcttgag cgcatattcacc 300
gttcaacttct ccggccagtt cactggcaca gccggagcct gtcgctacgg gcccggcggt 360
ccctccctccgc ccagccaggc gtcatccggc caggccaggg tggccctaa cgccgcctac 420
ctgcccagct gcctcgagag ccagcccgct attcgcaatc agggttacag cacggtcacc 480
ttcgacggga cgccccagcta cggtcacacag ccctcgccacc atgcccgcac gttccccaaac 540
cactcattca agcatgagga tcccatgggc cagcagggtcg ctgggtga gcagcagttac 600
tcgggtccgc ccccggtcta tggctgcccac accccccaccg acagctgcac cggcagccag 660
gctttgtgtc tgaggacgccc ctacagcagt gacaatttat accaaatgac atcccgatctt 720
qaatqcatqa ccttqaatca gatqaactta ggagccaccc taaagggtcg a 771

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<210> 331
<211> 567
<212> DNA
<213> *Homo sapiens*

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<400> 331
atgcagccatc accaccatca ccaccacagc acagggtacg agagcgataa ccacacaacg 60
cccatccctc gggagccca atacagaata cacacgcacg gtgttccatg aggcatttcag 120
gatgtgcgac gtgtgcctgg agtagccccg actcttgcac ggtcgccatc tgagaccagt 180
gagaaacgcc cttcatgtg tgcttaccca ggctgcaata agagatattt taagctgtcc 240
cacttacaga tgcacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 300
gactgtgaac gaagggtttt tcgttcagac cagctaaaaa gacacccaaag gagacatata 360
ggtgtgaaac cattccagtg taaaacttgt cagcggaaagt tctcccggtc cgaccacctg 420
aagaccacca ccaggactca tacaggtgaa aagcccttca gctgtcggtg gccaagttgt 480
cagaaaaagt ttgcccggtc agatgaattt gtccggccatc acaacatgca tcagagaaac 540
atgacccaaac tccagctggc qctttqa 567
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<210> 332
<211> 342
<212> PRT
<213> *Homo sapiens*

```

<400> 332
Met Gln His His His His His Met Ser Asp Lys Ile Ile His Leu
      5           10           15
Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
      20          25          30
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
      35          40          45
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
      50          55          60

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Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
 65 70 75 80
 Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
 85 90 95
 Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
 100 105 110
 Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
 115 120 125
 His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
 130 135 140
 Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser
 145 150 155 160
 Ser Arg His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile
 165 170 175
 Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly
 180 185 190
 Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg
 195 200 205
 Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro
 210 215 220
 Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met His Ser
 225 230 235 240
 Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys
 245 250 255
 Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg
 260 265 270
 His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe
 275 280 285
 Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu
 290 295 300
 Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg
 305 310 315 320
 Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn Met Thr
 325 330 335
 Lys Leu Gln Leu Ala Leu
 340

<210> 333
 <211> 410
 <212> PRT
 <213> Homo sapiens

<400> 333
 Met Gln His His His His His Met Ser Asp Lys Ile Ile His Leu
 5 10 15
 Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
 20 25 30
 Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
 35 40 45
 Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
 50 55 60
 Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly

65	70	75	80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala			
85	90	95	
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu			
100	105	110	
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His			
115	120	125	
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly			
130	135	140	
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser			
145	150	155	160
Ser Arg Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val			
165	170	175	
Pro Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala			
180	185	190	
Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala			
195	200	205	
Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro			
210	215	220	
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly			
225	230	235	240
Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His			
245	250	255	
Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro			
260	265	270	
Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met			
275	280	285	
Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala			
290	295	300	
Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser			
305	310	315	320
Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser			
325	330	335	
Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln			
340	345	350	
Gln Tyr Ser Val Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp			
355	360	365	
Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser			
370	375	380	
Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn			
385	390	395	400
Gln Met Asn Leu Gly Ala Thr Leu Lys Gly			
405	410		

<210> 334

<211> 591

<212> PRT

<213> Homo sapiens

<400> 334

Met Gln His His His His His Met Ser Asp Lys Ile Ile His Leu

5

10

15

Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile

20	25	30	
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala			
35	40	45	
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val			
50	55	60	
Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly			
65	70	75	80
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala			
85	90	95	
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu			
100	105	110	
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His			
115	120	125	
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly			
130	135	140	
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Asp Lys Ser			
145	150	155	160
Ser Arg Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala			
165	170	175	
Val Pro Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly			
180	185	190	
Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser			
195	200	205	
Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro			
210	215	220	
Pro Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp			
225	230	235	240
Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val			
245	250	255	
His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly			
260	265	270	
Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg			
275	280	285	
Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro			
290	295	300	
Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro			
305	310	315	320
Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His			
325	330	335	
Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu			
340	345	350	
Gln Gln Tyr Ser Val Pro Pro Val Tyr Gly Cys His Thr Pro Thr			
355	360	365	
Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser			
370	375	380	
Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp			
385	390	395	400
Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr			
405	410	415	
Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg			
420	425	430	
Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val			
435	440	445	
Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu			

450	455	460
Lys Arg Pro Phe Met Cys	Ala Tyr Pro Gly Cys	Asn Lys Arg Tyr Phe
465	470	475
Lys Leu Ser His Leu Gln Met His Ser Arg	Lys His Thr Gly Glu	Lys
485	490	495
Pro Tyr Gln Cys Asp Phe Lys Asp Cys	Glu Arg Arg Phe Phe	Arg Ser
500	505	510
Asp Gln Leu Lys Arg His Gln Arg Arg His	Thr Gly Val Lys Pro	Phe
515	520	525
Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser	Arg Ser Asp His	Leu Lys
530	535	540
Thr His Thr Arg Thr His Thr Gly Glu Lys	Pro Phe Ser Cys	Arg Trp
545	550	555
Pro Ser Cys Gln Lys Phe Ala Arg Ser Asp	Glu Leu Val Arg	His
565	570	575
His Asn Met His Gln Arg Asn Met Thr Lys	Leu Gln Leu Ala	Leu
580	585	590

<210> 335
 <211> 256
 <212> PRT
 <213> Homo sapiens

<400> 335		
Met Gln His His His His His Gly Ser Asp Val Arg Asp Leu Asn		
5	10	15
Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Cys Ala		
20	25	30
Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala		
35	40	45
Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro		
50	55	60
Pro Ala Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys		
65	70	75
Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu		
85	90	95
Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly		
100	105	110
Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser		
115	120	125
Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys		
130	135	140
Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr		
145	150	155
Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala		
165	170	175
Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln		
180	185	190
Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Val Tyr Gly		
195	200	205
Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu		
210	215	220

Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn	Leu	Tyr	Gln	Met	Thr	Ser	Gln	Leu
225															240
Glu	Cys	Met	Thr	Trp	Asn	Gln	Met	Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly
														255	
245										250					

<210> 336
<211> 188
<212> PRT
<213> Homo sapiens

<400> 336															
Met	Gln	His	His	His	His	His	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp	
									5	10				15	
Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr
									20	25				30	
His	Gly	Val	Phe	Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val
									35	40				45	
Ala	Pro	Thr	Leu	Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg	Pro
									50	55				60	
Phe	Met	Cys	Ala	Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	Leu	Ser
									65	70				80	
His	Leu	Gln	Met	His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln
									85	90				95	
Cys	Asp	Phe	Lys	Asp	Cys	Glu	Arg	Arg	Phe	Phe	Arg	Ser	Asp	Gln	Leu
									100	105				110	
Lys	Arg	His	Gln	Arg	Arg	His	Thr	Gly	Val	Lys	Pro	Phe	Gln	Cys	Lys
									115	120				125	
Thr	Cys	Gln	Arg	Lys	Phe	Ser	Arg	Ser	Asp	His	Leu	Lys	Thr	His	Thr
									130	135				140	
Arg	Thr	His	Thr	Gly	Glu	lys	Pro	Phe	Ser	Cys	Arg	Trp	Pro	Ser	Cys
									145	150				160	
Gln	Lys	Lys	Phe	Ala	Arg	Ser	Asp	Glu	Leu	Val	Arg	His	His	Asn	Met
									165	170				175	
His	Gln	Arg	Asn	Met	Thr	Lys	Leu	Gln	Leu	Ala	Leu				
									180	185					

<210> 337
<211> 324
<212> DNA
<213> Homo sapiens

<400> 337															
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gcagttccat	ccctgggtgg	cgttggaggc	tgcgcactgc	cggttagccg	tgcagcacag	120									
tgggctccag	ttctggactt	cgcaccgcct	ggtgcatccg	catacggttc	cctgggtgg	180									
ccagcacctc	cgtccgcacac	gcgtccaccc	cctccacccgc	ccccgcactc	cttcatcaaa	240									
cagaaccta	gctgggtgg	tgcagaaccc	cacgaagaac	agtgcctgag	cgcattctga	300									
gaattctgca	gatatccatc	acac				324									

<210> 338
<211> 462
<212> DNA
<213> Homo sapiens

<400> 338

atgcagcatc accaccatca ccaccacgaa gaacagtgc tgagcgcatt caccgttcac 60
 ttctccggcc agttcaactgg cacagccgga gcctgtcgct acggggccctt cggtcctcct 120
 ccgcccagcc aggcgtcatc cgccaggcc aggtatttc ctaacgcgcc ctacctgccc 180
 agctgcctcg agagccagcc cgctattcgc aatcagggtt acagcacgt cacccgtac 240
 gggacgccc gctacgtca cacgcctcg caccatgcgg cgcagttccc caaccactca 300
 ttcaagcatg aggtccat gggccagcag ggctcgctgg gtgagcagca gtactcggtg 360
 ccgccccccgg tctatggctg ccacacccccc accgacagct gcaccggcag ccaggcttg 420
 ctgctgagga cgccctacag cagtgacaat ttatactgat ga 462

<210> 339

<211> 405

<212> DNA

<213> Homo sapiens

<400> 339

atgcagcatc accaccatca ccaccaggct ttgctgctga ggacgccta cagcagtgc 60
 aatttatacc aaatgacatc ccagcttcaa tgcattacact ggaatcagat gaacttagga 120
 gccacctaagggccacag cacagggtac gagagcgata accacacaac gcccattcctc 180
 tgcggagccc aatacagaat acacacgcac ggtgtttca gaggcattca ggatgtgcga 240
 cgtgtgcctg gagtagcccc gactttgttca cggtcggcat ctgagaccag tgagaaacgc 300
 cccttcatgt gtgcttaccc aggctgcaat aagagatatt ttaagctgtc ccacttacag 360
 atgcacagca ggaagcacac tggtgagaaa ccataccagt gatga 405

<210> 340

<211> 339

<212> DNA

<213> Homo sapiens

<400> 340

atgcagcatc accaccatca ccaccacagc aggaagcaca ctggtgagaa accataccag 60
 tgtgacttca aggactgtga acgaaggttt ttgcgttcag accagctcaa aagacaccaa 120
 aggagacata caggtgtgaa accattccag tgtaaaactt gtcagcgaaa gttctccgg 180
 tccgaccacc tgaagaccca caccaggact catacaggtg aaaagccctt cagctgtcg 240
 tggccaagtt gtcagaaaaa gtttgcggc tcagatgaat tagtccgcca tcacaacatg 300
 catcagagaa acatgaccaa actccagctg gcgcttga 339

<210> 341

<211> 1110

<212> DNA

<213> Homo sapiens

<400> 341

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 actggcacag ccggagccctg tcgctacggg cccttcggc ctcctccggc cagccaggcg 180
 tcatccggcc aggccaggat gtttctaaac ggccttacc tgcccagctg cctcgagagc 240
 cagcccgcta ttgcataa ggttacagc acggcacct tcgacggac gcccagctac 300
 ggtcacacgc cctcgacca tgcggcgcag ttcccaacc actcattcaa gcatgaggat 360
 cccatggcc accgaggctc gctgggtgag cagcagtact cggtgccggc cccggcttat 420
 ggctgcccaca cccccaccga cagctgcacc ggcagccagg ctttgctgtc gaggacgccc 480

tacagcagtg acaatttata ccaaatgaca tcccagctt aatgcatgac ctggaatcag 540
atgaaacttag gagccacctt aaagggccac agcacagggt acgagagcga taaccacaca 600
acgcccattcc tctcgggagc ccaatacaga atacacacgc acggtgttctt cagaggcatt 660
caggatgtgc gacgtgtgcc tggagtagcc ccgactctt tacggtcggc atctgagacc 720
agtgagaaac gccccttcat gtgtgcattac ccaggctgca ataagagata ttttaagctg 780
tcccacttac agatgcacag caggaagcac actggtgaga aaccatacca gtgtgacttc 840
aaggactgtg aacgaagggtt tttcggttca gaccagctca aaagacacca aaggagacat 900
acaggtgtga aaccattcca gtgtaaaact tgcagcgaa agttctcccg gtccgaccac 960
ctgaagaccc acaccaggac tcatacagggt gaaaagccct tcagctgtcg gtggccaaagt 1020
tgtcagaaaa agtttgcggc gtcagatgaa ttatcgccatc atcacaacat gcatcagaga 1080
aacatgacca aactccagct ggcgtttga 1110

<210> 342
<211> 99
<212> PRT
<213> *Homo sapiens*

<400> 342
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 5 10 15
 Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Cys Ala
 20 25 30
 Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
 35 40 45
 Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
 50 55 60
 Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
 65 70 75 80
 Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
 85 90 95
 Ser Ala Phe

<210> 343
<211> 152
<212> PRT
<213> *Homo sapiens*

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<400> 343
Met Gln His His His His His His Glu Glu Gln Cys Leu Ser Ala
      5           10           15
Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys
      20          25          30
Arg Tyr Gly Pro Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly
      35          40          45
Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu
      50          55          60
Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp
      65          70          75          80
Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe
      85          90          95
Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser
      100         105         110

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Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His
 115 120 125
 Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr
 130 135 140
 Pro Tyr Ser Ser Asp Asn Leu Tyr
 145 150

<210> 344
 <211> 133
 <212> PRT
 <213> Homo sapiens

<400> 344
 Met Gln His His His His His Gln Ala Leu Leu Leu Arg Thr Pro
 5 10 15
 Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
 20 25 30
 Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
 35 40 45
 Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
 50 55 60
 Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
 65 70 75 80
 Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
 85 90 95
 Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
 100 105 110
 Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
 115 120 125
 Glu Lys Pro Tyr Gln
 130

<210> 345
 <211> 112
 <212> PRT
 <213> Homo sapiens

<400> 345
 Met Gln His His His His His Ser Arg Lys His Thr Gly Glu
 5 10 15
 Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg
 20 25 30
 Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro
 35 40 45
 Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
 50 55 60
 Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg
 65 70 75 80
 Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg
 85 90 95
 His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
 100 105 110

<210> 346
 <211> 369
 <212> PRT
 <213> Homo sapiens

<400> 346
 Met Gln His His His His His Ser Phe Ile Lys Gln Glu Pro
 5 10 15
 Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe
 20 25 30
 Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg
 35 40 45
 Tyr Gly Pro Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln
 50 55 60
 Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser
 65 70 75 80
 Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly
 85 90 95
 Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro
 100 105 110
 Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu
 115 120 125
 Gly Glu Gln Gln Tyr Ser Val Pro Pro Val Tyr Gly Cys His Thr
 130 135 140
 Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro
 145 150 155 160
 Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
 165 170 175
 Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
 180 185 190
 Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
 195 200 205
 Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
 210 215 220
 Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
 225 230 235 240
 Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
 245 250 255
 Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
 260 265 270
 Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe
 275 280 285
 Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys
 290 295 300
 Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His
 305 310 315 320
 Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys
 325 330 335
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
 340 345 350
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
 355 360 365

Leu

<210> 347
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 347
 ggctccgacg tgcgggacct g

21

<210> 348
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 348
 gaattctcaa agcgccagct ggagtttgg

30

<210> 349
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 349
 ggctccgacg tgcgggacct g

21

<210> 350
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 350
 gaattctcaa agcgccagct ggagtttgg

30

<210> 351
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 351		
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<210> 352		
<211> 30		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 352		
gaattctcaa agcgccagct ggagttgg		30
<210> 353		
<211> 29		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 353		
cacgaagaac agtgcctgag cgcattcac		29
<210> 354		
<211> 32		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 354		
ccggcgaatt catcagtata aattgtcact gc		32
<210> 355		
<211> 24		
<212> DNA		
<213> Artificial Sequence		
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<223> Primer		
<400> 355		
caggcttgc tgctgaggac gccc		24
<210> 356		
<211> 34		
<212> DNA		
<213> Artificial Sequence		
<220>		

<223> Primer	
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cacggagaat tcatcaactgg tatggtttctt cacc	34
<210> 357	
<211> 28	
<212> DNA	
<213> Artificial Sequence	
<220>	
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<400> 357	
cacagcagga agcacacactgg tgagaaac	28
<210> 358	
<211> 30	
<212> DNA	
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<211> 22	
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<223> Primer	
<400> 359	
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<210> 360	
<211> 30	
<212> DNA	
<213> Artificial Sequence	
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<223> Primer	
<400> 360	
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<210> 361	
<211> 33	
<212> DNA	
<213> Artificial Sequence	

<220>		
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ggttccgacg tgcgggacct gaacgcactg ctg		33
<210> 362		
<211> 40		
<212> DNA		
<213> Artificial Sequence		
<220>		
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ctgccggcag cagtgcgttc aggtcccgca cgtcggAAC		40
<210> 363		
<211> 35		
<212> DNA		
<213> Artificial Sequence		
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<210> 364		
<211> 38		
<212> DNA		
<213> Artificial Sequence		
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<223> Primer		
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<210> 365		
<211> 35		
<212> DNA		
<213> Artificial Sequence		
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<223> Primer		
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<210> 366		
<211> 33		
<212> DNA		
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<220>		
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<210> 367		
<211> 38		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Primer		
<400> 367		
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<210> 368		
<211> 39		
<212> DNA		
<213> Artificial Sequence		
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<223> Primer		
<400> 368		
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<210> 369		
<211> 38		
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<223> Primer		
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ggttccctgg gtggtccagc acctccgccc gcaacgcc		38
<210> 370		
<211> 38		
<212> DNA		
<213> Artificial Sequence		
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<210> 371		
<211> 40		
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<213> Artificial Sequence	
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<212> DNA	
<213> Artificial Sequence	
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<210> 373	
<211> 38	
<212> DNA	
<213> Artificial Sequence	
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<223> Primer	
<400> 373	
gaaccttagct ggggtggtgc agaaccgcac gaagaaca	38
<210> 374	
<211> 39	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 374	
ctcaggcact gttcttcgtg cggttctgca ccacccag	39
<210> 375	
<211> 32	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Primer	
<400> 375	
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<210> 376	
<211> 34	

<212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 376
 gtgtgatgga tatctgcaga attctcagaa tgcg

34

<210> 377
 <211> 1292
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> 253,256,517,518,520,521,522,743,753,754,
 758
 <223> n = A,T,C or G

<400> 377

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 gcaccgcgg gtgcattccgc acacggtccc ctgggtggtc cggcgccggc gtcggcaccg 180
 cccgcgcgcg cgccgcgcgc gccgcactcc ttcatcaaac agggaccgag ctgggtggc 240
 gcgaaactgc ackaakaaca gtacctgagc gcgttcaccg ttcactccctc cggtcagggtt 300
 cactggcacg gcccggcct gtcgctacgg gcccctcggc cccctccgc ccagccaggc 360
 gtcatccggc caggccagga tgcgttcttag cgcccccgtc ctgcccagcc gcctcgagag 420
 ccagcccgct acccgcaatc ggggctacag cacggtcacc ttcgacgggg cgtccggcta 480
 cggtcacacg ccctcgccacc atgcggcgca gttctcsmar yyactcgta ggcgtgagga 540
 tccatgggc cagcagggtc cgctgggtga gcagcagtgc tcggcgccgc cccggcctg 600
 tggccgccac acccccgccg acagctgcgc cggcagccag gctttgtcgc tgagggcgcc 660
 ctgttagcgc gacggtttat accaagtgac gtcccagctt gagtgcattt cctggagtca 720
 gatgagcctc gggccgcct tamcgggcca cakyacargg tacgagagcg atgatcacac 780
 aaccccccgc ctctcgagg cccaataacag aatacacacg cacgggtcct tcagggcggt 840
 tcagggtgtc cgccgtgtc ctggagtagc cccgactctt gtacgggtcgg catctgaggg 900
 cagtgaggaa cgccccctca tgcgtgctt cccaggtgc aataggaggt atctgaagct 960
 gccccgttca cagatgcacg gttaggaagca cgctgggtgag agaccatacc agtgtgactt 1020
 caaggactgt ggacggaggt ttttctgtc agacggctc aaaagacacc agggaggca 1080
 tacagatgtc aagccattcc agcgtaagac ctgtcagcga gggttctccc ggccaacca 1140
 cctgaagacc cacgcccagg ctcatgcagg tggaaagccc cccaggtgc ggtggcaga 1200
 ttgtcagaga aagcctgccc ggtcaagtga gttggccgc catcgacaca tgcattcagag 1260
 gggcatgacc gaactccagc tggcgctttt aa 1292

<210> 378
 <211> 1291
 <212> DNA
 <213> Homo sapiens

<400> 378

atgggctccg acgttcgtga cctaaacgcg ctgctgccgg cagttccgtc cccgggtgg 60
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<213> Homo sapiens

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<211> 1515
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<400> 385

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<210> 387

<211> 1089

<212> DNA

<213> Homo sapiens

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<210> 388

<211> 1035

<212> DNA

<213> Homo sapiens

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 accgccttcc tcggcttggg ttttgcgtac aacaacggca acggcgacg agtccaacgc 180
 gtggctggga ggcgtccggc gcaagtcctc ggcatttcca cccggcgtacgt gatcaccgc 240
 gtcgacggcg ctccgatcaa ctccggccacc gcgatggcg acgcgtttaa cgggcatcat 300
 cccgggtacg tcatctcggt gacctggcaa accaagtcgg gcccacgcg tacagggAAC 360
 gtgacattgg cggaggacc cccggccgaa ttccacttct tcatcaaaca ggaaccgagc 420
 tggggtggtg cagaaccgca cgaagaacag tgcctgagcg cattcaccgt tcacttctcc 480
 ggccagttca ctggcacacg cggagcctgt cgctacggc cttcggtcc tcctccgccc 540
 agccaggcgt catccggcca ggcaggatg tttccctaacg ccccttaccc gcccagctgc 600
 ctcgagagcc agcccgctat tcgcaatcg gttacagca cggtcaccc cgcacggacg 660
 cccagctacg gtcacacgccc ctgcacccat gcccgcgt tccccaaacca ctcattcaag 720
 catgaggatc ccatgggcca gcagggctcg ctgggtgagc agcagtaactc ggtgccgccc 780
 cccggctatg gtcacacac ccccaacgcg agctgcaccc gcaaggccaggc tttgctgctg 840
 aggacccctt acagcagtga caatttatac caaatgacat cccagcttga atgcatgacc 900
 tggaaatcaga tgaacttagg agccaccta aaggggccaca gcacaggta cgagagcgat 960
 aaccacacaa cgccttaccc ctgcggagcc caatacagaa tacacacgca cgggttcc 1020
 agaggcattc agtga 1035

<210> 389

<211> 1263

<212> DNA

<213> Homo sapiens

<400> 389

atgacggccg cgtccgataa ctccagctg tcccaggggt ggcagggatt cgccattccg 60
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 accgccttcc tcggcttggg tttgtcgac aacaacggca acggcgacg agtccaacgc 180
 gtggtcggg ggcgtccggc gcaagtctc ggcacatctca cccggcgacgt gatcaccgcg 240
 gtcgacggcg ctccgatcaa ctccggccacc gcgatggcg acgcgcttaa cgggcatcat 300
 cccgggtacg tcatctcggt gacctggcaa accaagtcgg gcggcacgcg tacagggAAC 360
 gtgacattgg ccgagggacc cccggccgaa ttcccgtgg tgccgcgcg cagcccgatg 420
 ggctccgacg ttccggacct gaacgcactg ctgcggcgacgt ttccgtccct ggtgggtgg 480
 ggtggttgcg cactgcccgt tagcggtgca gcacagtggg ctccgggttct ggacttcgca 540
 ccggccgggtg catccgcata cggttccctg ggtggtccgg caccggccgc ggcacccggc 600
 ccggccggccg cggccggccgc gcaactccttc atcaaacagg aaccgagctg ggtggtgca 660
 gaaccgcacg aagaacagtg cctgagcgca ttacccgttc acttctccgg ccagttca 720
 ggcacagccg gaggctgtcg ctacgggccc ttccgttccct ctccggcccg ccaggcgtca 780
 tccggccagg ccaggatgtt tcctaacgcg ccctacctgc ccagctgcct cgagagccag 840
 cccgctattt gcaatcaggg ttacagcactg gtcacccgtt acgggacggc cagctacgg 900
 cacacgcctt cgcaccatgc ggcgcagttc cccaaaccact cattcaagca tgaggatccc 960
 atgggccago agggctcgct ggttgagcgac cagtactcggt tgccggccccc ggtctatggc 1020
 tgccacaccc ccaccgacag ctgcaccggc agccaggctt tgctgctgag gacccctac 1080
 agcagtgaca atttatacca aatgacatcc cagcttgaat gcatgacctg gaatcagatg 1140
 aacttaggag ccacctaataa gggccacagc acagggtaac agagcgataa ccacacaacg 1200
 cccatccttgc gggagggccca atacagaata cacacgcacg gtgtcttca 1260
 tga 1263

<210> 390

<211> 1707

<212> DNA

<213> Homo sapiens

<400> 390

atgacggccg cgtccgataa ctccagctg tcccaggggt ggcagggatt cgccattccg 60
 atcgggcagg cgatggcgat cgccggccag atcaagcttc ccaccgttca tatcggttca 120
 accgccttcc tcggcttggg tttgtcgac aacaacggca acggcgacg agtccaacgc 180
 gtggtcggg ggcgtccggc gcaagtctc ggcacatctca cccggcgacgt gatcaccgcg 240
 gtcgacggcg ctccgatcaa ctccggccacc gcgatggcg acgcgcttaa cgggcatcat 300
 cccgggtacg tcatctcggt gacctggcaa accaagtcgg gcggcacgcg tacagggAAC 360
 gtgacattgg ccgagggacc cccggccgaa ttcccgtgg tgccgcgcg cagcccgatg 420
 ggctccgacg ttccggacct gaacgcactg ctgcggcgacgt ttccgtccct ggtgggtgg 480
 ggtggttgcg cactgcccgt tagcggtgca gcacagtggg ctccgggttct ggacttcgca 540
 ccggccgggtg catccgcata cggttccctg ggtggtccgg caccggccgc ggcacccggc 600
 ccggccggccg cggccggccgc gcaactccttc atcaaacagg aaccgagctg ggtggtgca 660
 gaaccgcacg aagaacagtg cctgagcgca ttacccgttc acttctccgg ccagttca 720
 ggcacagccg gaggctgtcg ctacgggccc ttccgttccct ctccggcccg ccaggcgtca 780
 tccggccagg ccaggatgtt tcctaacgcg ccctacctgc ccagctgcct cgagagccag 840
 cccgctattt gcaatcaggg ttacagcactg gtcacccgtt acgggacggc cagctacgg 900
 cacacgcctt cgcaccatgc ggcgcagttc cccaaaccact cattcaagca tgaggatccc 960
 atgggccago agggctcgct ggttgagcgac cagtactcggt tgccggccccc ggtctatggc 1020
 tgccacaccc ccaccgacag ctgcaccggc agccaggctt tgctgctgag gacccctac 1080
 agcagtgaca atttatacca aatgacatcc cagcttgaat gcatgacctg gaatcagatg 1140
 aacttaggag ccacctaataa gggccacagc acagggtaac agagcgataa ccacacaacg 1200
 cccatccttgc gggagggccca atacagaata cacacgcacg gtgtcttca 1260
 gatgtgcac gtgtgcctgg agtagccccg actctgtac gtgcggcatc tgagaccagt 1320
 gagaacgcgc cttcatgtg tgcttaccca ggctgcaata agagatatt taagctgtcc 1380
 cacttacaga tgcacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 1440
 gactgtgaac gaaggtttt tcgttcagac cagctaaaaa gacaccaaaag gagacataca 1500

ggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctcccggtc cgaccacctg 1560
 aagaccacaca ccaggactca tacaggtgaa aagcccttca gctgtcggtg gccaagttgt 1620
 cagaaaaagt ttgccccgtc agatgaatta gtccgcccata acaacatgca tcagagaaac 1680
 atgaccaaac tccagctggc gctttga 1707

<210> 391

<211> 344

<212> PRT

<213> Homo sapiens

<400> 391

Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly
 5 10 15

Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys
 20 25 30

Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val
 35 40 45

Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser
 50 55 60

Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala
 65 70 75 80

Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu
 85 90 95

Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys
 100 105 110

Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro
 115 120 125

Ala Glu Phe His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala
 130 135 140

Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser
 145 150 155 160

Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly
 165 170 175

Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro
 180 185 190

Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg
 195 200 205

Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly
 210 215 220

His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys

225	230	235	240												
His	Glu	Asp	Pro	Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	Tyr
				245					250						255
Ser	Val	Pro	Pro	Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	Cys
					260			265				270			
Thr	Gly	Ser	Gln	Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn
				275			280				285				
Leu	Tyr	Gln	Met	Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	Met
				290		295				300					
Asn	Leu	Gly	Ala	Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp
				305		310			315				320		
Asn	His	Thr	Thr	Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr
				325			330					335			
His	Gly	Val	Phe	Arg	Gly	Ile	Gln								
			340												

<210> 392
 <211> 568
 <212> PRT
 <213> Homo sapiens

<400> 392															
Met	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu	Ser	Gln	Gly	Gly	Gln	Gly
					5				10				15		
Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala	Ile	Ala	Gly	Gln	Ile	Lys
					20			25				30			
Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala	Phe	Leu	Gly	Leu	Gly	Val
					35			40				45			
Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val	Gln	Arg	Val	Val	Gly	Ser
					50			55			60				
Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr	Gly	Asp	Val	Ile	Thr	Ala
					65			70			75		80		
Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr	Ala	Met	Ala	Asp	Ala	Leu
					85				90			95			
Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser	Val	Thr	Trp	Gln	Thr	Lys
					100			105			110				
Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr	Leu	Ala	Glu	Gly	Pro	Pro
					115			120			125				

Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val
 130 135 140

Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly
 145 150 155 160

Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val
 165 170 175

Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly
 180 185 190

Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His
 195 200 205

Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
 210 215 220

Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
 225 230 235 240

Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro
 245 250 255

Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
 260 265 270

Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
 275 280 285

Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser
 290 295 300

His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
 305 310 315 320

Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
 325 330 335

Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
 340 345 350

Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
 355 360 365

Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
 370 375 380

Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
 385 390 395 400

Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
 405 410 415

Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu
 420 425 430
 Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala
 435 440 445
 Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met
 450 455 460
 His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys
 465 470 475 480
 Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln
 485 490 495
 Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
 500 505 510
 Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
 515 520 525
 Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe
 530 535 540
 Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn
 545 550 555 560
 Met Thr Lys Leu Gln Leu Ala Leu
 565

<210> 393
 <211> 420
 <212> PRT
 <213> Homo sapiens

<400> 393
 Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gly Gln Gly
 5 10 15
 Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys
 20 25 30
 Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val
 35 40 45
 Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser
 50 55 60
 Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala
 65 70 75 80
 Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu
 85 90 95

Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys
 100 105 110

Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro
 115 120 125

Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val
 130 135 140

Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly
 145 150 155 160

Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val
 165 170 175

Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly
 180 185 190

Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His
 195 200 205

Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
 210 215 220

Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
 225 230 235 240

Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro
 245 250 255

Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
 260 265 270

Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
 275 280 285

Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser
 290 295 300

His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
 305 310 315 320

Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
 325 330 335

Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
 340 345 350

Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
 355 360 365

Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
 370 375 380

Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
 385 390 395 400

Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
 405 410 415

Arg Gly Ile Gln
 420

<210> 394

<211> 362

<212> PRT

<213> Homo sapiens

<400> 394

Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro
 5 10 15

His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln
 20 25 30

Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro
 35 40 45

Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala
 50 55 60

Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln
 65 70 75 80

Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr
 85 90 95

Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu
 100 105 110

Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val
 115 120 125

Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly
 130 135 140

Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr
 145 150 155 160

Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu
 165 170 175

Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His
 180 185 190

Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly

195	200	205	
Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro			
210	215	220	
Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met			
225	230	235	240
Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu			
245	250	255	
Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp			
260	265	270	
Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg			
275	280	285	
His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys			
290	295	300	
Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr			
305	310	315	320
His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys			
325	330	335	
Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln			
340	345	350	
Arg Asn Met Thr Lys Leu Gln Leu Ala Leu			
355	360		
<210> 395			
<211> 214			
<212> PRT			
<213> Homo sapiens			
<400> 395			
Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro			
5	10	15	
His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln			
20	25	30	
Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro			
35	40	45	
Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala			
50	55	60	
Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln			
65	70	75	80

Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr
 85 90 95
 Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu
 100 105 110
 Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val
 115 120 125
 Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly
 130 135 140
 Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr
 145 150 155 160
 Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu
 165 170 175
 Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His
 180 185 190
 Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly
 195 200 205
 Val Phe Arg Gly Ile Gln
 210

<210> 396
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 396
 gacgaaagca tatgcactcc ttcatcaaac 30

 <210> 397
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PCR primer

 <400> 397
 cgcgtgaatt catcaactgaa tgcctctgaa g 31

 <210> 398
 <211> 31
 <212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 398

cgataagcat atgacggccg cgtccgataaa c

31

<210> 399

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 399

cgcgtgaatt catcactgaa tgcctctgaa g

31

<210> 400

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 400

cgataagcat atgacggccg cgtccgataaa c

31

<210> 401

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 401

gtctgcagcg gccgctcaaa gcgccagc

28

<210> 402

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 402

gacgaaagca tatgcactcc ttcatcaaac

30

<210> 403

<211> 28

<212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer

<400> 403
 gtctgcagcg gccgctcaaa gcgccagc

28

<210> 404
 <211> 449
 <212> PRT
 <213> Homo sapiens

<400> 404
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
 85 90 95
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
 100 105 110
 Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
 115 120 125
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
 130 135 140
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
 145 150 155 160
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
 165 170 175
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
 180 185 190
 Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
 195 200 205
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
 210 215 220
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
 225 230 235 240
 Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser
 245 250 255
 Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu
 260 265 270
 Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
 275 280 285
 His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro
 290 295 300

Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
 305 310 315 320
 Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
 325 330 335
 Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
 340 345 350
 Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
 355 360 365
 Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
 370 375 380
 Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
 385 390 395 400
 His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
 405 410 415
 Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
 420 425 430
 Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
 435 440 445
 Leu

<210> 405
 <211> 428
 <212> PRT
 <213> Homo sapiens

<400> 405
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Pro Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Thr
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Val Pro Pro Gly Ala Pro Val Cys
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Leu Pro
 50 55 60
 Pro Pro Pro Ser His Ser Phe Thr Lys Gln Glu Pro Ser Trp Gly Gly
 65 70 75 80
 Thr Glu Pro His Ala Gly Gln Gly Arg Ser Ala Leu Val Ala His Ser
 85 90 95
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
 100 105 110
 Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
 115 120 125
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
 130 135 140
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
 145 150 155 160
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Ser
 165 170 175
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Pro Gly Glu Gln Gln
 180 185 190
 Tyr Ser Ala Pro Pro Pro Val Cys Gly Cys Arg Thr Pro Thr Gly Ser
 195 200 205

Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Ala Pro Tyr Ser Gly Gly
 210 215 220
 Asp Leu His Gln Thr Thr Ser Gln Leu Gly His Met Ala Trp Asn Gln
 225 230 235 240
 Thr Asn Leu Gly Ala Thr Leu Lys Gly His Gly Thr Gly Tyr Glu Ser
 245 250 255
 Asp Asp His Thr Thr Pro Ile Leu Cys Gly Thr Gln Tyr Arg Ile Arg
 260 265 270
 Ala Arg Gly Val Leu Arg Gly Thr Gln Asp Val Arg Cys Val Pro Gly
 275 280 285
 Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
 290 295 300
 Pro Leu Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg His Phe Lys Pro
 305 310 315 320
 Ser Arg Leu Arg Val Arg Gly Arg Glu Arg Thr Gly Glu Lys Pro Tyr
 325 330 335
 Gln Arg Asp Phe Lys Asp Arg Gly Arg Gly Leu Leu Arg Pro Asp Gln
 340 345 350
 Leu Lys Arg His Gln Arg Gly His Thr Gly Val Lys Pro Leu Gln Cys
 355 360 365
 Glu Ala Arg Arg Arg Pro Pro Arg Pro Gly His Leu Lys Val His Thr
 370 375 380
 Arg Thr His Thr Gly Gly Glu Pro Phe Ser Cys Arg Trp Pro Ser Cys
 385 390 395 400
 Gln Glu Lys Ser Ala Arg Pro Asp Glu Ser Ala Arg Arg His Asn Met
 405 410 415
 His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
 420 425

<210> 406
 <211> 414
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> 85, 86, 172, 173, 242, 245, 246, 247
 <223> Xaa = Any Amino Acid

<400> 406
 Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Asp Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala His
 35 40 45
 Gly Pro Leu Gly Gly Pro Ala Pro Pro Ser Ala Pro Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro His Ser Phe Ile Lys Gln Gly Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Leu His Xaa Xaa Gln Tyr Leu Ser Ala Phe Thr Val His Ser
 85 90 95
 Ser Gly Gln Val His Trp His Gly Arg Gly Leu Ser Leu Arg Ala Pro

100	105	110	
Arg Pro Pro Ser Ala Gln Pro Gly Val Ile Arg Pro Gly Gln Asp Val			
115	120	125	
Ser Arg Ala Leu Pro Ala Gln Pro Pro Arg Glu Pro Ala Arg Tyr Pro			
130	135	140	
Gln Ser Gly Leu Gln His Gly His Leu Arg Arg Gly Val Arg Leu Arg			
145	150	155	160
Ser His Ala Leu Ala Pro Cys Gly Ala Val Leu Xaa Xaa Thr Arg Ala			
165	170	175	
Gly Ser His Gly Pro Ala Gly Ser Ala Gly Ala Ala Val Leu Gly Ala			
180	185	190	
Ala Pro Gly Leu Trp Pro Pro His Pro Arg Arg Gln Leu Arg Arg Gln			
195	200	205	
Pro Gly Phe Ala Ala Glu Gly Ala Leu Gln Arg Arg Phe Ile Pro Ser			
210	215	220	
Asp Val Pro Ala Val His Gly Leu Glu Ser Asp Glu Pro Arg Gly Arg			
225	230	235	240
Leu Xaa Gly Pro Xaa Xaa Xaa Val Arg Glu Arg Ser His Asn Ala Arg			
245	250	255	
Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Gly			
260	265	270	
Arg Ser Gly Cys Ala Pro Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr			
275	280	285	
Val Gly Ile Gly Gln Gly Thr Pro Pro His Val Cys Leu Pro Arg Leu			
290	295	300	
Gln Glu Val Ser Glu Ala Ala Pro Leu Thr Asp Ala Arg Glu Ala Arg			
305	310	315	320
Trp Glu Thr Ile Pro Val Leu Gln Gly Leu Trp Thr Glu Val Phe Leu			
325	330	335	
Leu Arg Pro Ala Gln Lys Thr Pro Gly Glu Ala Tyr Arg Cys Glu Ala			
340	345	350	
Ile Pro Ala Asp Leu Ser Ala Arg Val Leu Pro Ala Gln Pro Pro Glu			
355	360	365	
Asp Pro Arg Gln Asp Ser Cys Arg Lys Ala Pro Gln Leu Ser Val Val			
370	375	380	
Arg Leu Ser Glu Lys Ala Cys Pro Val Lys Val Gly Pro Pro Ser Arg			
385	390	395	400
His Ala Ser Glu Gly His Asp Arg Thr Pro Ala Gly Ala Leu			
405	410		

<210> 407
 <211> 417
 <212> PRT
 <213> Homo sapiens

<400> 407

Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Thr Ala Pro			
1	5	10	15
Ser Leu Gly Gly Gly Asp Cys Thr Leu Pro Val Ser Gly Thr Ala			
20	25	30	
Gln Trp Ala Pro Val Pro Ala Ser Ala Pro Pro Gly Ala Ser Ala Tyr			
35	40	45	
Asp Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro			

50	55	60	
Pro Pro Pro Pro His Ser Cys Gly Glu Gln Gly Pro Ser Trp Gly Gly			
65	70	75	80
Ala Glu Pro Arg Glu Gly Gln Cys Leu Ser Ala Pro Ala Val Arg Phe			
85	90	95	
Ser Gly Arg Phe Thr Gly Thr Val Gly Ala Cys Arg Tyr Gly Pro Leu			
100	105	110	
Gly Pro Pro Pro Ser Gln Ala Pro Ser Gly Gln Thr Arg Met Leu			
115	120	125	
Pro Ser Ala Pro Tyr Leu Ser Ser Cys Leu Arg Ser Arg Ser Ala Ile			
130	135	140	
Arg Ser Gln Gly Arg Ser Thr Ala Pro Ser Ala Gly Arg Pro Ala Met			
145	150	155	160
Ala Pro Thr Leu Ala Pro Pro Ala Gln Ser His Tyr Ser Gln His Gly			
165	170	175	
Val Leu His Gly Pro Ala Gly Leu Ala Gly Ala Ala Val Leu Gly Ala			
180	185	190	
Ala Pro Gly Leu Trp Leu Pro His Pro His Arg Gln Leu His Arg Gln			
195	200	205	
Pro Gly Phe Ala Ala Glu Asp Ala Leu Gln Gln Phe Ile Pro Asn			
210	215	220	
Asp Ile Pro Ala Met His Asp Leu Glu Ser Asp Glu Leu Arg Ser His			
225	230	235	240
Leu Lys Gly Pro Gln His Arg Val Arg Glu Arg Pro His Asn Ala His			
245	250	255	
Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Arg			
260	265	270	
His Ser Gly Cys Ala Thr Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr			
275	280	285	
Val Ala Pro Glu Thr Ser Glu Asn Ala Pro Trp Cys Val Leu Pro Gly			
290	295	300	
Leu Gln Gly Val Phe Ala Val Pro Leu Thr Gly Ala Gln Gln Glu Ala			
305	310	315	320
His Trp Asp Ala Thr Pro Val Arg Leu Gln Gly Pro Trp Thr Arg Ala			
325	330	335	
Ser Pro Phe Gly Thr Ser Pro Arg Asp Thr Lys Gly Asp Ile Gln Val			
340	345	350	
Arg Asn His Ser Ser Val Arg Leu Val Ser Glu Gly Ser Pro Gly Pro			
355	360	365	
Thr Thr Gly Pro Thr Pro Gly Pro Thr Arg Val Gly Ser Pro Ser Ala			
370	375	380	
Ala Gly Gly Gln Ala Ala Arg Glu Gly Ser Pro Ser Gln Thr Asn Ser			
385	390	395	400
Val Ile Thr Thr Cys Ile Ser Glu Thr Leu Asn Ser Ser Trp Arg Phe			
405	410	415	
Glu			

<210> 408
 <211> 429
 <212> PRT
 <213> Homo sapiens

<400> 408
 Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
 1 5 10 15
 Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
 20 25 30
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
 35 40 45
 Gly Ser Leu Gly Gly Pro Ala Pro Pro Ala Pro Pro Pro Pro Pro
 50 55 60
 Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
 65 70 75 80
 Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
 85 90 95
 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
 100 105 110
 Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
 115 120 125
 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
 130 135 140
 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
 145 150 155 160
 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
 165 170 175
 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
 180 185 190
 Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
 195 200 205
 Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
 210 215 220
 Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
 225 230 235 240
 Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser
 245 250 255
 Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His
 260 265 270
 Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly
 275 280 285
 Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
 290 295 300
 Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu
 305 310 315 320
 Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr
 325 330 335
 Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln
 340 345 350
 Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys
 355 360 365
 Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His
 370 375 380
 Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser
 385 390 395 400
 Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
 405 410 415
 Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu

420

425

<210> 409
 <211> 495
 <212> PRT
 <213> Homo sapiens

<400> 409

Met	Ala	Ala	Pro	Gly	Ala	Arg	Arg	Ser	Leu	Leu	Leu	Leu	Leu	Leu	Ala
1	5							10							15
Gly	Leu	Ala	His	Gly	Ala	Ser	Ala	Leu	Phe	Glu	Asp	Leu	Met	Gly	Ser
	20							25							30
Asp	Val	Arg	Asp	Leu	Asn	Ala	Leu	Leu	Pro	Ala	Val	Pro	Ser	Leu	Gly
	35							40							45
Gly	Gly	Gly	Gly	Cys	Ala	Leu	Pro	Val	Ser	Gly	Ala	Ala	Gln	Trp	Ala
	50							55							60
Pro	Val	Leu	Asp	Phe	Ala	Pro	Pro	Gly	Ala	Ser	Ala	Tyr	Gly	Ser	Leu
65				70						75					80
Gly	Gly	Pro	Ala	Pro	Pro	Pro	Ala	Pro	His						
	85							90							95
Ser	Phe	Ile	Lys	Gln	Glu	Pro	Ser	Trp	Gly	Gly	Ala	Glu	Pro	His	Glu
	100							105							110
Glu	Gln	Cys	Leu	Ser	Ala	Phe	Thr	Val	His	Phe	Ser	Gly	Gln	Phe	Thr
	115							120							125
Gly	Thr	Ala	Gly	Ala	Cys	Arg	Tyr	Gly	Pro	Phe	Gly	Pro	Pro	Pro	Pro
130							135				140				
Ser	Gln	Ala	Ser	Ser	Gly	Gln	Ala	Arg	Met	Phe	Pro	Asn	Ala	Pro	Tyr
145							150			155					160
Leu	Pro	Ser	Cys	Leu	Glu	Ser	Gln	Pro	Ala	Ile	Arg	Asn	Gln	Gly	Tyr
							165			170					175
Ser	Thr	Val	Thr	Phe	Asp	Gly	Thr	Pro	Ser	Tyr	Gly	His	Thr	Pro	Ser
	180						185								190
His	His	Ala	Ala	Gln	Phe	Pro	Asn	His	Ser	Phe	Lys	His	Glu	Asp	Pro
	195						200				205				
Met	Gly	Gln	Gln	Gly	Ser	Leu	Gly	Glu	Gln	Gln	Tyr	Ser	Val	Pro	Pro
	210						215				220				
Pro	Val	Tyr	Gly	Cys	His	Thr	Pro	Thr	Asp	Ser	Cys	Thr	Gly	Ser	Gln
225							230				235				240
Ala	Leu	Leu	Leu	Arg	Thr	Pro	Tyr	Ser	Ser	Asp	Asn	Leu	Tyr	Gln	Met
				245				250							255
Thr	Ser	Gln	Leu	Glu	Cys	Met	Thr	Trp	Asn	Gln	Met	Asn	Leu	Gly	Ala
	260						265				270				
Thr	Leu	Lys	Gly	His	Ser	Thr	Gly	Tyr	Glu	Ser	Asp	Asn	His	Thr	Thr
	275						280				285				
Pro	Ile	Leu	Cys	Gly	Ala	Gln	Tyr	Arg	Ile	His	Thr	His	Gly	Val	Phe
	290						295				300				
Arg	Gly	Ile	Gln	Asp	Val	Arg	Arg	Val	Pro	Gly	Val	Ala	Pro	Thr	Leu
305							310				315				320
Val	Arg	Ser	Ala	Ser	Glu	Thr	Ser	Glu	Lys	Arg	Pro	Phe	Met	Cys	Ala
							325			330					335
Tyr	Pro	Gly	Cys	Asn	Lys	Arg	Tyr	Phe	Lys	Leu	Ser	His	Leu	Gln	Met
	340						345				350				
His	Ser	Arg	Lys	His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln	Cys	Asp	Phe	Lys

355	360	365
Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln		
370	375	380
Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg		
385	390	395
Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr		
405	410	415
Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe		
420	425	430
Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn		
435	440	445
Met Thr Lys Leu Gln Leu Ala Leu Leu Asn Asn Met Leu Ile Pro Ile		
450	455	460
Ala Val Gly Gly Ala Leu Ala Gly Leu Val Leu Ile Val Leu Ile Ala		
465	470	475
Tyr Leu Ile Gly Arg Lys Arg Ser His Ala Gly Tyr Gln Thr Ile		
485	490	495

<210> 410
 <211> 504
 <212> PRT
 <213> Homo sapiens

<400> 410		
Met Gln Ile Phe Val Lys Thr Leu Thr Gly Lys Thr Ile Thr Leu Glu		
1	5	10
Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp		
20	25	30
Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys		
35	40	45
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu		
50	55	60
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Ala Met Gly Ser Asp		
65	70	75
Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly		
85	90	95
Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro		
100	105	110
Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly		
115	120	125
Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His		
130	135	140
Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu		
145	150	155
Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr		
165	170	175
Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro		
180	185	190
Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr		
195	200	205
Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr		
210	215	220
Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser		

225	230	235	240
His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro			
245	250	255	
Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro			
260	265	270	
Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln			
275	280	285	
Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met			
290	295	300	
Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala			
305	310	315	320
Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr			
325	330	335	
Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe			
340	345	350	
Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu			
355	360	365	
Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala			
370	375	380	
Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met			
385	390	395	400
His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys			
405	410	415	
Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln			
420	425	430	
Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg			
435	440	445	
Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr			
450	455	460	
Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe			
465	470	475	480
Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn			
485	490	495	
Met Thr Lys Leu Gln Leu Ala Leu			
500			

<210> 411
 <211> 10
 <212> PRT
 <213> Homo sapiens

<400> 411
 Val Leu Asp Phe Ala Pro Pro Gly Ala Ser
 1 5 10

<210> 412
 <211> 15
 <212> PRT
 <213> Homo sapiens

<400> 412
 Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala
 1 5 10 15

<210> 413

<211> 15

<212> PRT

<213> Homo sapiens

<400> 413

Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu

1

5

10

15